

# Some interesting Bulbophyllums from New Guinea Araucaria Forests

by N.H.S. Howcroft

The genus *Araucaria* in New Guinea is comprised of two species. These are *A. cunninghamii* Ait. ex Lamb. and *A. hunsteinii* K.Schum. The former has the greatest geographical distribution, extending from Northern New South Wales, Australia to New Guinea. In New Guinea its range commences near the Saga-Aho river in Papua New Guinea at latitude 10°04'S, longitude 105°15'E, and extends as far as the north western end of the Vogelkop of Irian Jaya near Sausapor, at latitude 0°30'S, longitude 132°05'E. The species occurs at altitudes ranging from 60 to 2,745 metres. (Aubreville, 1965; Havel, 1971; Gray, 1973, Zieck pers. comm. 1975; Howcroft, 1977). The distribution of the latter species appears to be restricted to Papua New Guinea. It has not been recorded for Irian Jaya. *Araucaria hunsteinii* occurs in a few large stands and numerous scattered stands of varying sizes from latitudes 5°11'S to 10°11'S and longitudes 142°74'E to 150°01'E. Its altitudinal range is from 520 to 2,100 metres (Gray 1973).

In general, the *Araucaria* stands are rich in other flora; and orchidaceous plants in most cases are well represented and diverse. Among the orchid genera represented in these stands is the genus *Bulbophyllum* which contains many interesting and beautiful species. Many of these are not well known, and are not often seen in cultivation. An interesting section of this genus encountered in many *Araucaria* stands is the section *Hyalosema* Schltr, of which there are more than six species represented in New Guinea. The species, in most cases, have fairly large flowers with prominent dorsal and lateral sepals, and small sometimes ornate petals.

To date four species of this section have been found in *Araucaria* forests three of which have been identified. These are described

Figure 1. *BULBOPHYLLUM FRITILLARIIFLORUM* J.J. Sm. in Bull.Jardin. Bot.Buit.Ser.2e.111 (1912): 24; Nova Guinea XII, 1 (1913):84, t XXII, 67.

An epiphyte, rhizomes creeping, up to 3mm thick, sometimes partly covered with sheaths which decompose. *Pseudobulbs* narrowly ovoid, distinctly 4 angled, 3-3.5cm tall, diameter 1.5cm, spaced approximately 1.5-2.0cm apart along the rhizome. *Leaf* one per pseudobulb, erect, fleshy, oblong-ovate, up to 13.0cm or more long by 4.0 cm wide, apex bluntly pointed, sometimes slightly bilobed, more or less petiolate at base (Fig. 1A) *Flower stalk* ascending, cylindrical with 5 prominent sheathing bracts, up to 16cm long, arising from the pseudobulbs and rhizomes. *Flowers* solitary, large, more or less erect. *Ovary* ascending, cylindrical, smooth, 4-5.0cm wide (Fig. 1C). *Lateral sepals* joined along basal edge, single sepal more or less falcate and porrect, 6.5cm long by 2.5cm wide (Figs 1A, D). *Petals* small, falcate-lanceolate, up to 1.2cm long by 0.4cm wide, apex terminating in a long thin filament, side of petal covered with small warts (Fig. 1E). *Labellum* hinged to column foot, mobile, convex, about 0.6cm long by 0.4cm wide, ventrally keeled (Figs 1F, G), margins and central upper surface covered with many hairs (Fig. 1G). *Column* short, about 0.45cm long by 0.5cm from top to tip of lower lateral lobes that extend from either side of the stigma (Fig. 1H), smooth, with a bilobed extension on either side of the clinandrium (Fig. 1F), column foot curved and

broad (Fig. 1F). *Anther cap* about 0.2cm tall and 0.15cm wide, more or less reniform with a distinct keel (Figs. 1I-J). *Pollen* in one solid waxy mass, more or less reniform (Figs. K-L).

#### Colour Description.

The flower is marbled red brown, with a faint greenish yellow flush in between; the column is yellowish white and covered with maroon blotches; the labellum is dark maroon with the undersides white with maroon blotches and its hairs are red, maroon and white.

#### Flowering Season.

Not well known, however the specimen illustrated in Figure 1 produced flowers in May and June 1975.

#### Locality Details of Specimen.

Found on Hoop pine (*Araucaria cunninghamii*) and on understory trees at Pimaga in the Southern Highlands Province at 900 metres altitude, latitude 6°30'S., longitude 143°30'E.. The area has a rainfall of approximately 4,000mm per annum.

#### Distribution.

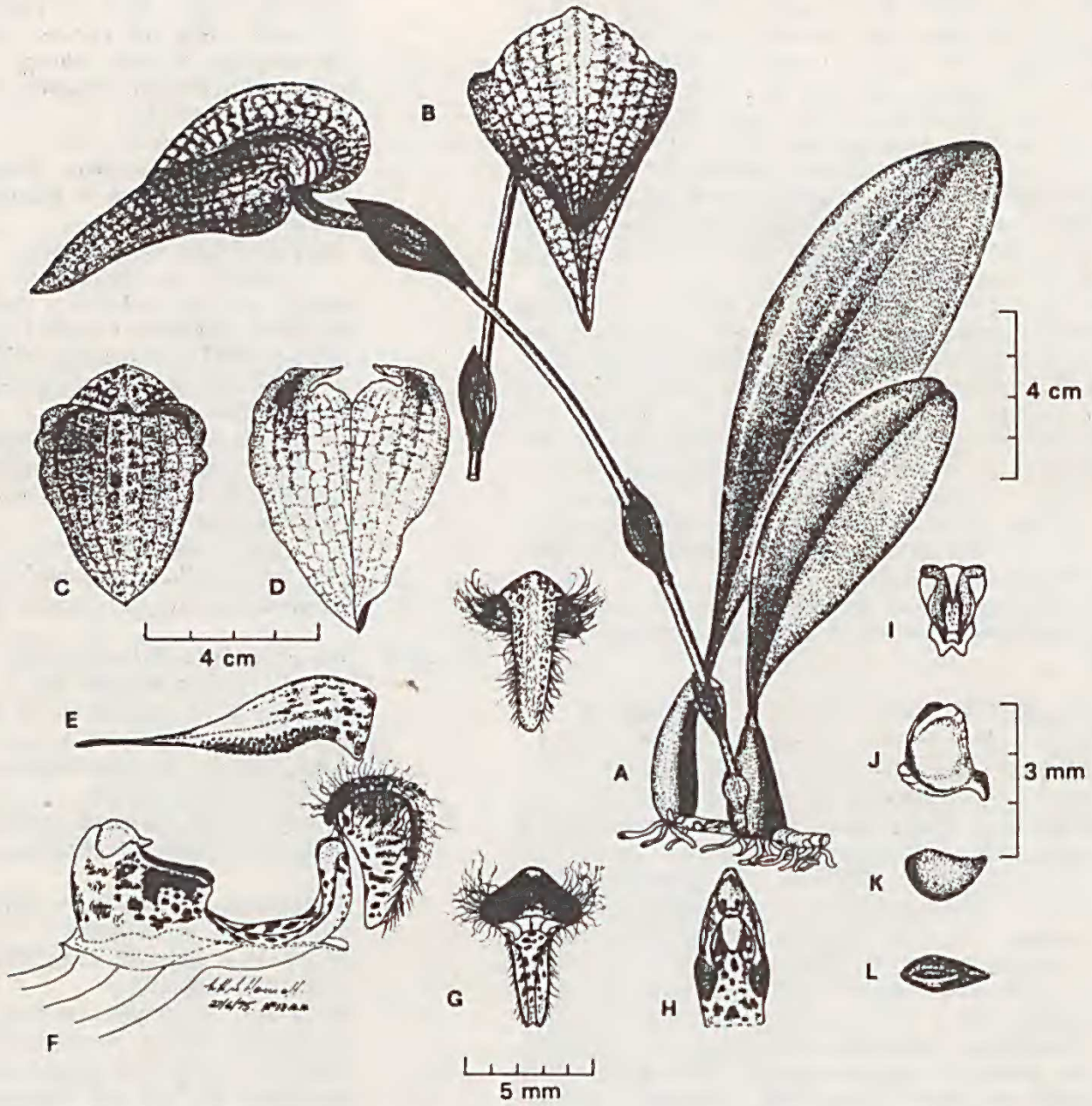
This species has been reported for other parts of Papua New Guinea without specific details of locality. It also occurs in Irian Jaya.

#### Other Details.

Spirit material of Fig. 1, illustration No.13 N.H. (Lae's 1520) has been lodged with the Lae Herbarium under Lae number 64039.

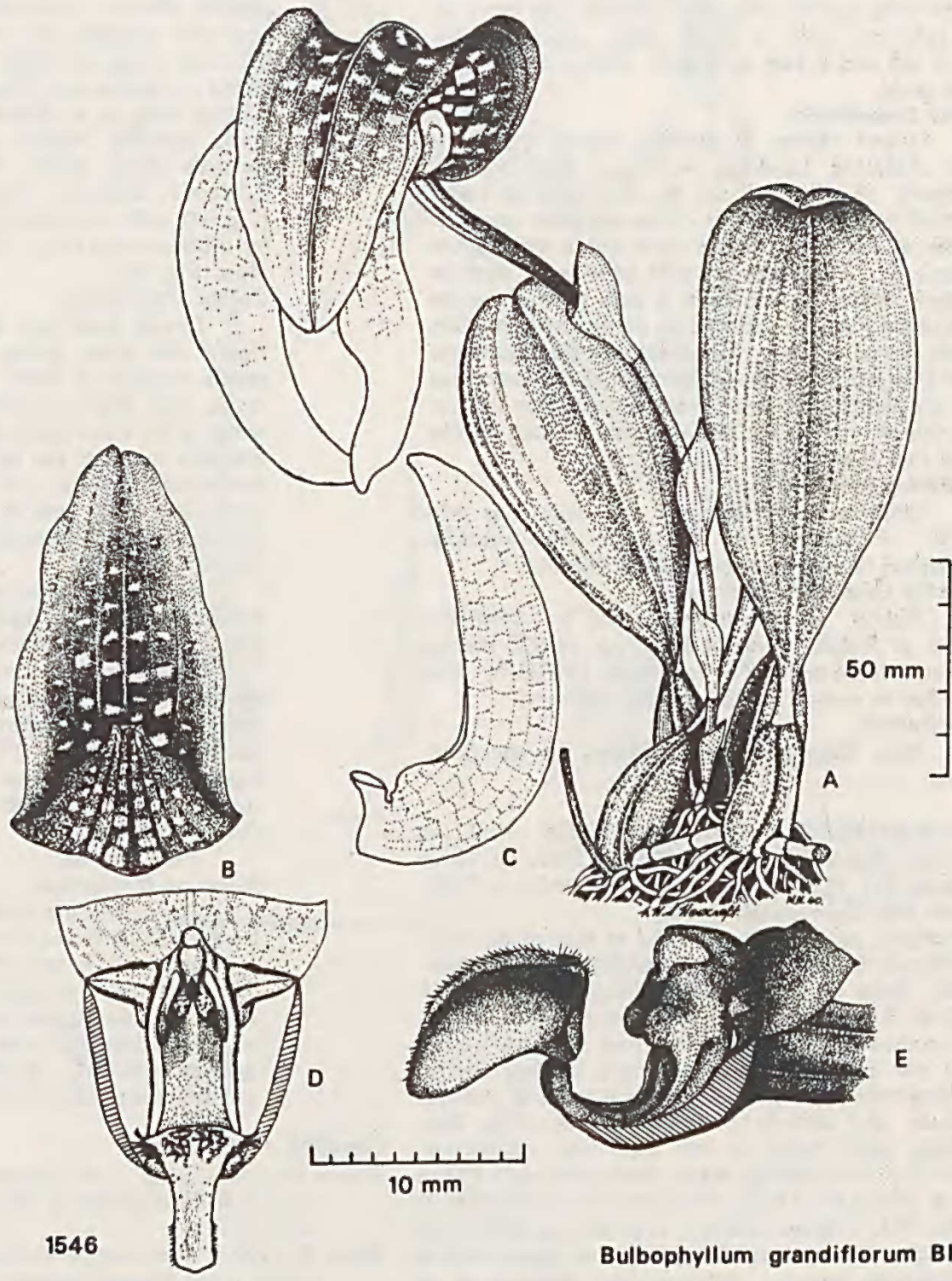
Figure 2. *BULBOPHYLLUM GRANDIFLORUM* Bl. in Rumphia IV, (1848):42-195, f.3; F. Muell.in Desc.Notes Pap.Plants II, (1876):30; Schltr in Orch.Dtsch. Neu Guinea (1911):740. J.J.Sm. in Nova Guinea XIV,3(1929):479; Mckillop in Aust.Orch.Rev. XXV, 3(1960):133-34, pl.124. *Bulbophyllum cominsii* Rolfe in Bull. Misc. Inf. Kew(1895):138; P.F.Hunt in Kew Bull.24(1970): 93. *Ehippium grandiflorum* (Bl.) J.J.Sm. in Nova Guinea VIII, 1(1909):95. *Hyalosema grandiflorum* (Bl.) Rolfe in Orch.Rev. XXVII, (1919):176. Epiphytic, rhizomes creeping, up to 6mm thick, sometimes partly covered with sheaths. *Pseudobulbs* more or less conical in outline, distinctly 4 angled, 3-3.5cm tall, diameter 1.5-2.0cm, spaced approximately 4cm apart along the rhizome. *Leaf* one per pseudobulb, more or less erect, firm fleshy, oblong-ovate, up to 16.0cm long by 6.5cm wide, obtuse, sometimes apically bilobed, more or less petiolate at base (Fig. 2A). *Flower Stalk* more or less ascending, cylindrical with 4 large sheathing bracts, 12cm or more in length and arising from base of pseudobulbs and rhizomes (Fig. 2A). *Flowers* solitary, large, more or less erect. *Ovary* ascending, cylindrical, smooth, approximately 7.0cm long by about 0.5cm in diameter (Fig. 2A). *Dorsal sepal* oblong-ovate, slightly convex, 0.7cm wide at base, 10.0cm long by 4-6.0 wide, with a distinct dorsal ridge (Figs. 2A-B.). *Lateral sepals* falcate, sometimes partly joined along the basal edge, 10.0cm long by 2-3.0cm wide (Fig. 2C), porrect to lax

FIGURE 1.



*Bulbophyllum fritillariiflorum* J.J.Sm.

FIGURE 2.



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*Bulbophyllum grandiflorum* Bl.

(Fig. 2A). *Petals* small, more or less triangular, 0.3cm wide at base and 0.3cm long (Fig. 2D). *Labellum* hinged to column foot, mobile, convexed obtuse, 1.1cm long by 0.5cm wide, ventrally keeled (Fig. 2E), margins and dorsal surface with short fine hairs (Figs. 2D-E). *Column* short, 0.5cm long and 0.4cm wide, smooth, with lateral lobes on either side of stigma (Figs. 2D-E); column foot 0.5cm long, curved (Fig. 2E). *Anther cap* more or less reniform with a dorsal ridge, approximately 0.2cm tall and 0.2cm in length. *Pollen* in one firm waxy mass.

#### Colour Description.

Flower colour is variable among specimens from different localities in Papua New Guinea. Generally the flowers can be described as being greenish yellow and brown, often the paler portions on dorsal and lateral sepals stand out as white spots or squares. The petals are pale green with maroon borders, while the labellum is pale greenish white with some maroon patterns on the broadest portion of the dorsal surface. The column is greenish white with fine red and maroon spots on the column foot and around the stigmatic section; each side lobe of the column has a large distinct maroon spot on the inner face (Fig. 2D).

#### Flowering Season.

Commences in January and continues into April. Flowering may occur in other months. Individual flowers last up to about 3 weeks.

#### Locality Details of Specimen.

Found on understory trees in *Acaucaria* forest at Bulolo, Morobe Province, at 800 metres altitude, latitude 7°17'S, longitude 146°31'E. The area has an annual rainfall around 1615mm.

#### Distribution.

New Guinea, islands adjacent to the Solomons.

Figure 3. *BULBOPHYLLUM TRACHYANTHUM* Krzl. in Oestern Bot. Zeitg. (1894):336; J.J.Sm. in Nova Guinea XII, 1(1913) 83, t.XXII,66; Schltr. in Orch. Dtsch Neu-Guinea (1911):740.

Epiphytic, plant habit the same as that of *B. fritillariiflorum* J.J.Sm. and *B. grandiflorum* Bl. *Pseudobulbs* more or less conical in outline, distinctly 4 angled, 3.5-4cm tall and 1-2.0cm in diameter, spaced approximately 3.0cm apart along rhizome. *Leaf* one per pseudobulb, erect, more or less fleshy, oblong-ovate, up to 16.0cm long by 2.8cm wide, obtuse, and slightly petiolate at base (Fig. 3A). *Flower stalk* more or less ascending, cylindrical, with 3 to 4 sheathing bracts, peduncle up to 8.0cm long, arising from base of pseudobulbs and rhizomes. (Fig. 3A). *Flowers* solitary, large but narrower than the other two species. *Ovary* more or less ascending, cylindrical, smooth, approximately 4.0cm long by 0.3cm in diameter (Figs. 3A-E). *Dorsal sepal* lanceolate, elongate-acuminate, 0.4cm wide at base by 6.45cm long and 1.0cm wide, convex at base and with two thirds of the margins involute towards the apex, nerves 7 and roughly parallel, and slightly raised on the dorsal surface of the sepal, fine pustules and hairs on both faces (Fig. 3B). *Lateral sepals* lanceolate to slightly falcate due to a curve in the lower basal margins, 4.2-6.0cm long and 0.4-0.6cm

wide, approximately two thirds of margins involute towards apex, nerves 5 and parallel, fine pustules and hairs on both surfaces (Fig. 3C). *Petals* obliquely rhombic, 0.35cm long by 0.4cm wide, 3 nerved with a long cylindrical and pointed appendage at apex, approximately 0.15 thick (Fig. 3D). *Labellum* small, hinged to tip of column foot, mobile, curved and tongue shaped (Fig. 3E), a shallow channel on the dorsal surface (Figs. 3F-G), and with pustules and fine hairs, ventrally keeled, 0.3-0.4cm long by 0.2cm wide and 0.15-0.2cm from dorsal surface to keel (Figs. 3E-F-G). *Column* short, 0.25cm long by 0.15-0.2cm wide, with 3 protuberances clasping anther, each apically bilobed or toothed (Figs. 3C-E), Column foot 0.2cm long, 0.35cm in diameter. *Anther* more or less reniform (Fig. H), with dorsal and lateral ridges, 0.11cm long by 0.05cm wide (Fig. 3I). *Pollen* in one firm waxy mass (Fig. 3J).

#### Colour Description.

Dorsal sepal light greenish white with maroon flecks and veins giving a marbled effect; lateral sepals maroon at base, merging into scattered red spots, and then to creamy white; the petals are white with three maroon veins and the appendages are dark maroon; the labellum is greenish yellow on the dorsal surface and has maroon spots on the underside; the column is yellowish green with maroon and pink striations and spots.

#### Flowering Season.

Not well known; the specimen illustrated was found in bloom in August.

#### Locality Details of Specimen.

The specimen illustrated was found growing on the trunk of a *Castanopsis* tree in Hoop pine forest at Woitape, Central Province, latitude 08°33'S, longitude 147°15'E. The area has an annual rainfall around 3180mm. The altitude in which the specimen was found is 1,700 metres.

#### Distribution.

New Guinea.

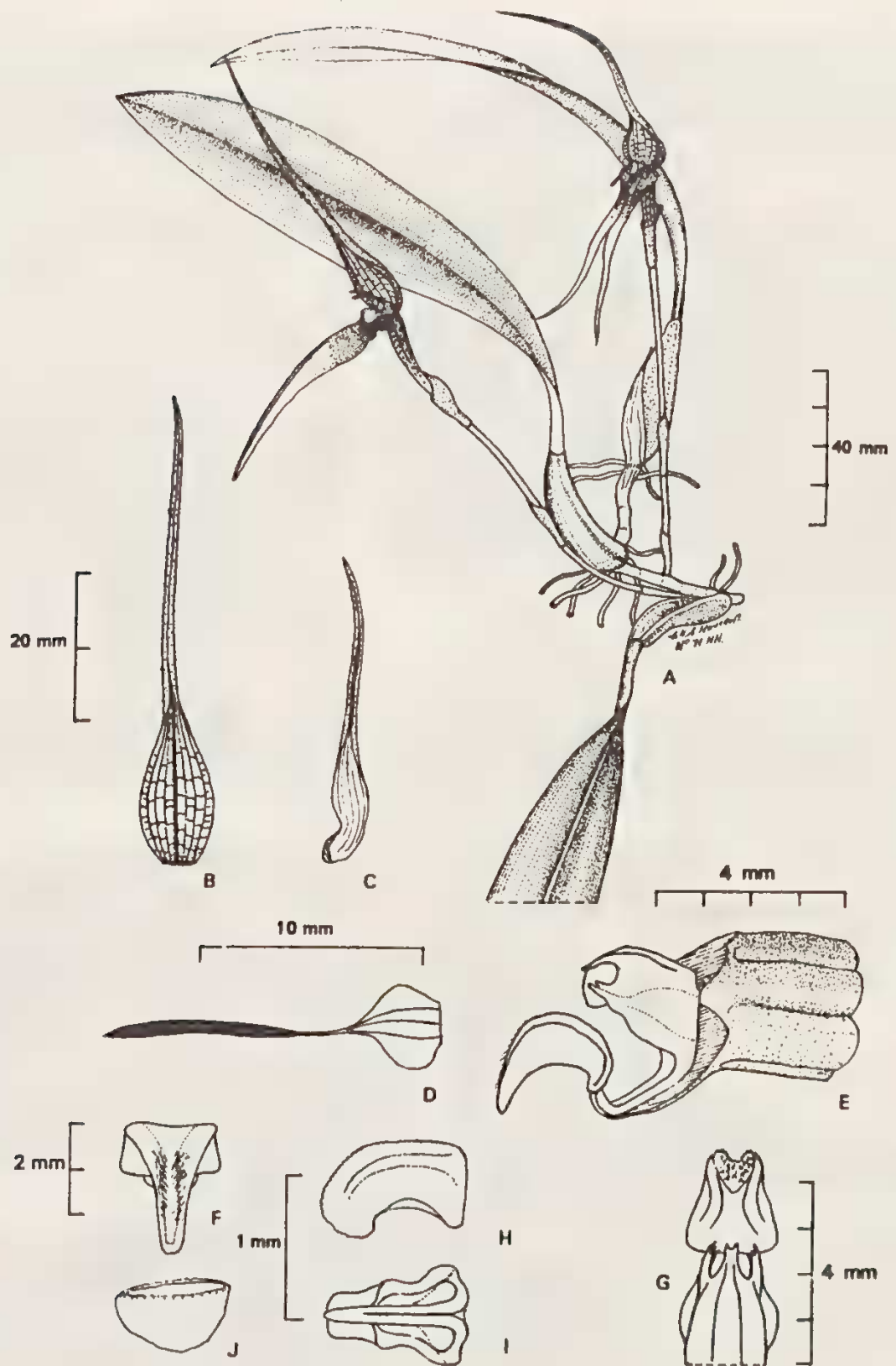
#### Notes on Cultivation.

Both the first two species described appear to be easy to cultivate either on trees in semi shade, or in pots with broken crocks and tree fern fibre. Good drainage is essential and moist conditions preferred. *Bulbophyllum trachyanthum* is difficult to grow below 950 metres altitude where dry seasons are well defined. It appears to enjoy well shaded positions with some daily moisture.

#### General References

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FIGURE 3.



*Bulbophyllum trachyanthum* Krzl.

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